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Message: Transmitted herewith: <ul style="list-style-type: none">• Transmittal Document; and• Appeal Brief.	
Re: Application No.: 10/033,925 Attorney Docket No: 2001-094-NSC	
Date: Wednesday, February 02, 2005	
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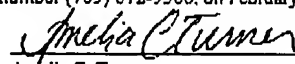
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Pesola et al.**Serial No.: **10/033,925**Filed: **December 28, 2001**For: **Volume Translation Apparatus
and Method**§
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§Group Art Unit: **2186**Examiner: **Thai, Tuan V.**Attorney Docket No.: **2001-094-NSC**Certificate of Transmission Under 37 C.F.R. § 1.8(a)

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By:


Amelia C. TurnerTRANSMITTAL DOCUMENT

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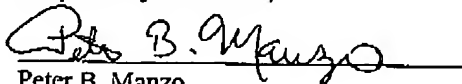
Sir:

TRANSMITTED HERewith:

- Appeal Brief (37 C.F.R. 41.37).

A fee of \$500.00 is required for filing an Appeal Brief. Please charge this fee to Storage Technology Corporation Deposit Account No. 19-4545. No additional fees are believed to be necessary. If, however, any additional fees are required, I authorize the Commissioner to charge these fees which may be required to Storage Technology Corporation Deposit Account No. 19-4545. No extension of time is believed to be necessary. If, however, an extension of time is required, the extension is requested, and I authorize the Commissioner to charge any fees for this extension to Storage Technology Corporation Deposit Account No. 19-4545.

Respectfully submitted,



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Docket No. 2001-094-NSC

PATENT**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**In re application of: **Pesola et al.**

Serial No.: 10/033,925

Filed: December 28, 2001

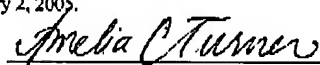
For: **Volume Translation Apparatus
and Method**§
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Examiner: **Thai, Tuan V.****RECEIVED
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By:


Amelia C. Turner**APPEAL BRIEF (37 C.F.R. 41.37)**

This brief is in furtherance of the Notice of Appeal, filed in this case on December 13, 2004.

The fees required under § 41.20(B)(2), and any required petition for extension of time for filing this brief and fees therefore, are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

(Appeal Brief Page 1 of 26)
Pesola et al. - 10/033,925

REAL PARTY IN INTEREST

The real party in interest in this appeal is the following party:

Storage Technology Corporation of Louisville, Colorado.

RELATED APPEALS AND INTERFERENCES

With respect to other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal, there are no such appeals or interferences.

STATUS OF CLAIMS**A. TOTAL NUMBER OF CLAIMS IN APPLICATION**

Claims in the application are: 1-33.

B. STATUS OF ALL THE CLAIMS IN APPLICATION

1. Claims canceled: none.
2. Claims withdrawn from consideration but not canceled: none.
3. Claims pending: 1-33.
4. Claims allowed: none.
5. Claims rejected: 1-33.
6. Claims objected to: none.

C. CLAIMS ON APPEAL

The claims on appeal are: 1-33.

STATUS OF AMENDMENTS

All of the amendments to the claims have been entered. No after final amendments were made in this case.

SUMMARY OF CLAIMED SUBJECT MATTER**A. CLAIM 1 - INDEPENDENT**

The subject matter of independent claim 1 is directed to a method of managing copies of virtual volume data as described on page 4, lines 3-13 of the Specification and in Figures 3A and 3B. Upon receiving an access request directed to an original virtual volume, the access request is mapped to a secondary virtual volume as described on page 12, line 24 through page 13, line 4 of the Specification and in Figures 3A and 3B. After the access request is mapped to the secondary virtual volume, the access request is performed on one or more physical volumes associated with the secondary virtual volume as described on page 13, lines 4-19 of the Specification and in Figures 3A and 3B.

B. CLAIMS 12 and 23 - INDEPENDENT

Independent method claim 1 of the present invention is representative of independent apparatus claim 12 and independent computer program product claim 23. As a result, the claimed subject matter of independent claims 12 and 23 will be found in the same locations as independent claim 1 as laid out above.

C. CLAIM 18 - DEPENDENT

Dependent apparatus claim 18 is directed to a means for redirecting the access request from a first secondary virtual volume to a second secondary virtual volume in response to a fault in a physical volume of the first secondary virtual volume as described on page 16, line 22 through page 17, line 2 of the Specification and in Figure 3B.

GROUND OF REJECTION TO BE REVIEWED ON APPEAL**A. GROUND OF REJECTION 1 (Claims 1-6, 8-17, and 19-22)**

Claims 1-6, 8-17, and 19-22 stand rejected under 35 U.S.C. § 102 as being anticipated by Kikinis et al. (U.S. Patent No. 5,964,848).

B. GROUND OF REJECTION 2 (Claims 7, 18, and 23-33)

Claims 7, 18, and 23-33 stand rejected under 35 U.S.C. § 103 as being unpatentable over Kikinis et al. (U.S. Patent No. 5,964,848).

ARGUMENT

A. GROUND OF REJECTION 1 (Claims 1-6, 8-17, and 19-22)

The Examiner has rejected claims 1-6, 8-17, and 19-22 under 35 U.S.C. § 102 as being anticipated by Kikinis et al. (U.S. Patent No. 5,964,848); hereinafter *Kikinis*. This rejection is respectfully traversed.

A prior art reference anticipates the claimed invention under 35 U.S.C. § 102 only if every element of a claimed invention is identically shown in that single reference, arranged as they are in the claims. (*In re Bond*, 910 F.2d 831, 832, 15 U.S.P.Q.2d 1566, 1567 (Fed. Cir. 1990)). All limitations of the claimed invention must be considered when determining patentability. (*In re Lowry*, 32 F.3d 1579, 1582, 32 U.S.P.Q.2d 1031, 1034 (Fed. Cir. 1994)). Anticipation focuses on whether a claim reads on the product or process a prior art reference discloses, not on what the reference broadly teaches. (*Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 U.S.P.Q. 781 (Fed. Cir. 1983)). *Kikinis* does not identically teach each and every element of Appellants' recited claims 1-6, 8-17, and 19-22 in the current invention.

A.1. Independent Claims 1 and 12

Independent claim 1 of the present invention, which is representative of independent claims 12 and 23, reads as follows:

1. A method of managing copies of virtual volume data, comprising:
receiving an access request directed to an original virtual volume;
mapping the access request to a secondary virtual volume; and
performing the access request on one or more physical volumes associated with the secondary virtual volume.

With regard to claim 1, the Examiner stated:

As per remark, Applicant's counsel contended that (a) "The cited reference does not teach the claimed limitations of receiving an access request directed to an original virtual volume; mapping the access request to a secondary virtual volume as claimed in claim 1" (page 9, first paragraph);....

With respect to (a) first of all, Examiner would like to emphasize that receiving access request directed to an original volume is taught as EIDE adapter which receives access request direct to the primary device 519 (column 4, lines 60 et seq.); noting that the controller firmware is the translating protocol which allows mapping of the access requests to multiple secondary IDE devices, for

example, *Kikinis* clearly disclose that each of the secondary IDE device having an EIDE microcontroller and firmware to translate between the EIDE protocol and the protocol of the particular device (e.g. see column 5, lines 19 et seq.); mapping process is part of the translating protocol which is inherently taught by *Kikinis*.

(*Office Action*, dated July 13, 2004, pages 8 and 9).

Additionally, with regard to claim 1, the Examiner stated:

The additional layer (known in the current claim 1 as a secondary virtual volume) is taught by *Kikinis* which known to be embedded within the secondary IDE device having an EIDE microcontroller/firmware for translating between the EIDE protocol and the protocol of the particular device (e.g. see *Kikinis*'s col. 5, lines 19 et seq.) wherein the mapping process is part of the translating protocol which must included within the system of *Kikinis* to carry out the translating operation.

(*Advisory Action*, dated January 4, 2005, Continuation sheet).

Kikinis does not identically teach every element of the Appellants' current invention as recited in claim 1. The *Kikinis* invention is in the field of peripheral device control and relates more specifically to control of data storage devices using an Integrated Drive Electronics (IDE) computer interface. (*Kikinis*, column 1, lines 11-14). *Kikinis* teaches, "[a]n IDE interface communicates with peripheral devices not conforming to ST506 specification by providing firmware to microcontrollers mounted on the non-conforming peripheral devices to translate between the data structure of an ST506 specification device and the data structure of the non-conforming device." (*Id.*, Abstract). "In the preferred mode for this embodiment, one primary device and eight secondary devices can be connected to the EIDE adapter and individually addressed by the CPU." (*Id.*, column 5, lines 3-5). "The EIDE firmware monitors the computer bus for a request to communicate with a secondary device. If no request is forthcoming, communication with the primary device is maintained. If (and when) there is a request on the bus for communication with a secondary device, including data to identify the particular device, the EIDE sends a command on the peripheral connection cable to deactivate the primary and enable the secondary devices." (*Id.*, lines 58-67). Consequently, *Kikinis* merely teaches a method for communicating with and switching between non-conforming secondary hardware devices.

In contrast, claim 1 of the present invention recites a method to manage copies of virtual volume data by receiving an access request directed to an original virtual volume, mapping the access request to a secondary virtual volume, and performing the access request on one or more physical volumes associated with the secondary virtual volume. Therefore, the current invention as recited in claim 1 is for managing copies of virtual volume data and not for managing peripheral devices that do not conform to a ST506 in a data processing system as taught in *Kikinis*. There is no reference in *Kikinis* with regard to receiving an access request to an original virtual volume and subsequently mapping that request to another virtual volume for the purpose of accessing one or more physical volumes. Mapping an access request is not taught nor is the desirability of such a feature suggested by *Kikinis*.

In *Kikinis*, the secondary devices accessed by the CPU appear to be hardware devices and not characterized as virtual volumes. Instead, *Kikinis* teaches the translation of protocols and data structures of peripheral, non-conforming secondary hardware devices in order for a CPU of a host system to access those peripheral devices which are not otherwise compatible with the host system. (*Id.*, column 2, lines 28-45). "In the EIDE according to the present invention, the secondary devices can be a mix of disc drives, CD-ROM drives, and cartridge tape drives, with each having an EIDE microcontroller controller and firmware to translate between the EIDE protocol and the protocol of the particular device." (*Id.*, column 5, lines 17-21). The immediately preceding passage further demonstrates that *Kikinis* is only concerned with the management of non-conforming, peripheral hardware devices.

Conversely, Appellants' present invention recited in claim 1 is for the management of virtual volume data copies that are associated with physical volume data. No redundancy of data is taught by *Kikinis*, meaning that if a request for data on the conforming primary device were for the sake of argument mapped to one of the non-conforming secondary devices, the requested data would not be found on the secondary device. Appellants merely find peripheral, non-conforming secondary devices in *Kikinis* that differ in protocol, with no description of seeking data on one device and finding it on another, whether through mapping or otherwise. Further, the idea of mapping access requests does not appear in the *Kikinis* reference. Therefore, *Kikinis* does not teach Appellants' recited claim 1 limitation of, "mapping the access request to a secondary virtual volume; and performing the access request on one or more physical volumes

associated with the secondary volume.”

Moreover, the method recited in claim 1 of the present invention provides an additional layer of functionality by mapping the original virtual volume to a secondary virtual volume to access one or more physical volumes associated with the secondary virtual volume. In other words, there are two layers of requests (original and secondary virtual volumes) before accessing the physical volumes (see Figures 3A and 3B in *Application* for illustration of this concept). By way of example:

[t]he present invention alleviates the burden on the host machines for performing complex volume management by inserting an additional layer of functionality between the host machine applications and the data storage library. This additional layer of functionality provides volume translation so that an input/output (I/O) request to a virtual volume may have the I/O request redirected to a different set of physical volumes in the event that an original set of physical volumes is unavailable, without requiring the host machine's applications to direct the I/O request to this different set of physical volumes. In other words, the host machine's applications may still direct I/O requests to the same virtual volume regardless of whether the original set of physical volumes are being accessed or a different set of physical volumes are being accessed due to a failure. Thus, the actual physical volumes being accessed are transparent to the host machine's applications.

(*Application*, page 11, line 22 – page 12, line 9).

Kikinis does not teach the additional layer of functionality as recited in claim 1 of the Appellants' current invention. Examiner Thai stated that the EIDE adapter receives an access request direct to the primary device and that the controller firmware is the translating protocol which allows mapping of the access requests to multiple secondary IDE devices. (*Office Action*, page 8). This is demonstrative of the fact that in *Kikinis* there is only one functional layer between the primary and secondary devices and that *Kikinis* does not teach the additional layer of functionality of mapping the original virtual volume to a secondary virtual volume to access one or more physical volumes associated with the secondary virtual volume as recited in claim 1 of the current invention. Furthermore, Appellants respectfully submit that the primary and secondary hardware devices referred to in *Kikinis* are more analogous to the “one or more physical volumes” recited in claim 1 of the present invention, as opposed to the original and secondary virtual volumes proposed by Examiner Thai.